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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/496,607	02/02/2000	Sarit Neter	YMEDIA.001A	6486

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EXAMINER

MOE, AUNG SOE

ART UNIT	PAPER NUMBER
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2612

15

DATE MAILED: 04/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
**09/496,607**

Applicant(s)  
**Sarit Neter**

Examiner  
**Aung Moe**

Art Unit  
**2612**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb 5, 2003
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above, claim(s) 2, 4-28, 30, 32-37, and 39-42 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 29, 31, and 38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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### DETAILED ACTION

1. Applicant's election with traverse of Species of Figures 4-6 & 12, and claims 1, 3, 29, 31 and 38 in Paper No. 14 is acknowledged. The traversal is on the ground(s) that the field of searches must necessarily cover all species, in addition to other related Classes and subclasses, to provide a complete and adequate search.

This is not found persuasive because it is noted that the most recent restriction requirement made was in form of an election of Species (noted that the patentably distinct Species of the invention as shown in the respective figures as set forth in the last Office Action), not a restriction requirement between more than one invention.

Moreover, the invention elected by the Applicant (i.e., Species of figures 4-6 and 12) is disclosed in the specification and drawings for being embodied in multiple patentably distinct embodiments (i.e., the sensor arrangements for the species of figures are patentably distinct from each other). In view of this, the mere evidence of several patentably distinct embodiments is *prima facie* evidence of examining burdens of the Examiner.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 2, 4-28, 30, 32-37, 39-42 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 14 (filed on 2/5/03).

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***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3 and 38 are rejected under 35 U.S.C. 102(a) as being anticipated by Hashimoto (U.S. 4,768,085).

Regarding claim 1, Hashimoto '085 discloses a color imaging system providing on-the-fly color interpolation using analog signals to reconstruct colors during sensor readout (Fig. 3, col. 3, lines 55-68), the imaging system comprising:

an array of pixel sensor elements wherein at least part of the array is arranged in rows and columns (Fig. 1; col. 3, lines 40+);

a color filter including a plurality of color filter components organized in a predefined pattern, the color filter overlaying at least a portion of the array (i.e., noted from Figs. 1 and 4 that the color filter components are organized in a predefined pattern);

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a readout control circuit coupled to the array (i.e., noted the element 2a as shown in Fig. 2; col. 4, lines 5+);

an array controller coupled to the array (i.e., see Fig. 2; col. 4, lines 5+);

wherein the readout control circuit (2a) and the array controller (2a, 2a1 and 2a2) are configured to simultaneously read out values for a group of pixel elements from two different rows and two pixel elements from two different columns (i.e., Figs. 2, 7 and 12; col. 3, lines 54+, and col. 5, lines 60+) and

to reconstruct color components for at least a first pixel sensor element and a second pixel sensor element using color information (i.e., noted that the G signal is reconstructed from the pixels' signals such as G1 and G2 as shown in Figs. 2 and 3) from other pixels elements (i.e., noted the pixel elements nH/mH as shown in Fig. 1) within at least the first portion of the array while the readout control circuit is reading said first portion of the array (i.e., col. 4, lines 20+ and col. 5, lines 1+).

Regarding claim 3, Hashimoto '085 discloses wherein the readout control circuit is adapted to perform color interpolation using two pixel sensor elements read out in parallel (i.e., col. 3, lines 60+ and col. 6, lines 14+).

Regarding claim 38, Hashimoto '085 discloses a color imager (i.e., Figs. 3, 5, 8 and 10) comprising:

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a first light sensor which generates a first analog output signal related to the amount of a first color of light sensed (i.e., noted the sensor of the sensor 2 of the imager generates the first analog output signal such that the green signal G1 as shown in Fig. 8 and 9; see col. 6, lines 10+);

a second light sensor which generates a second analog output signal related the amount of said first color of light sensed (i.e., noted the sensor of the sensor 2 of the imager generates the first analog output signal such that the green signal G3 as shown in Fig. 8 and 9; see col. 6, lines 10+);

a third light sensor (i.e., The Blue sensor of the sensor 2) which generates a third analog output signal related to the amount of a second color of light sensed (i.e., noted the sensor of the sensor 2 of the imager generates the third analog output signal such that the blue signal B2 as shown in Fig. 8 and 9; see col. 6, lines 10+);

a fourth light sensor (i.e., The Red sensor of the sensor 2) which generates a fourth analog output signal related to the amount of a third color of light sensed (i.e., noted the sensor of the sensor 2 of the imager generates a fourth analog output signal such that the red signal R as shown in Fig. 8 and 9; see col. 6, lines 10+);

a circuit configured to read out the first, second, third, and fourth analog values at the same time (i.e., col. 3, lines 55-68 and col. 5, lines 60+); and

an interpolation circuit configured to receive said first output signal and said second output signal (i.e., col. 3, lines 55+), wherein said interpolation circuit provides an interpolation

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signals on the fly based on at least said first analog output signal and said second analog output signal (col. 6, lines 5+).

4. Claims 29 and 31 are rejected under 35 U.S.C. 102(b) based upon a public use or sale of the invention. Maenaka et al. (U.S. 5,555,023).

Regarding claim 29, Maenaka '023 discloses a method of interpolating color components of an array of pixel sensor elements (col. 3, lines 40+ and col. 6, lines 45+), said method comprising:

reading a first rectangular portion of an array of pixel sensor elements simultaneously, wherein the first rectangular portion includes pixel sensor elements from at least two array columns and two array rows (i.e., Fig. 8; col. 1, lines 45-50, col. 2, lines 45+);

reading a second rectangular portion of the array of pixel sensor elements, wherein the second portion partly overlaps said first portion (i.e., Fig. 8; col. 1, lines 45+ and col. 2, lines 45+); and

Reconstructing color components using interpolation for at least a third portion of the array while said third portion of the array is being read (i.e., Figs. 2 and 8-9; col. 2, lines 35+, col. 6, lines 35+ and col. 7, lines 20+).

Regarding claim 31, Maenaka '023 discloses wherein reconstructing color components (i.e., the R, G and B signal as shown in Fig. 8) using interpolation is performed in real-time (i.e.,

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noted the color components are interpolated as read out from the CCD sensor in real-time as claimed).

*Conclusion*

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Acharya '960, Hibbard '976, Laroche '322 and Smith '565 shows a color imaging system providing on-the-fly color interpolation thereof.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Aung S. Moe** whose telephone number is **(703) 306-3021**. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Wendy Garber**, can be reach on (703) 305-4929.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**



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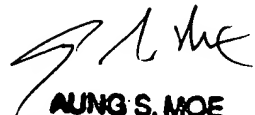
**(703) 872-9314**, (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive,  
Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to  
the customer service number **(703) 306-0377**.

A. Moe

April 4, 2003

  
**AUNG S. MOE**  
**PATENT EXAMINER**